Syllabus

Growth and development of the craniofacial compl - 97947

Last update 10-02-2015

HU Credits: 4

Degree/Cycle: 2nd degree (Master)

Responsible Department: Orthodontic Department, Faculty of Dental Medicine

Academic year: 1

Semester: 2nd Semester

Teaching Languages: English

Campus: Ein Karem

Course/Module Coordinator: Dr. Miri Haisraeli-Shalish and Dr. Zvi Muster

Coordinator Email: Dr. Miri Haisraeli-Shalish, mshalish@hadassah.org.il

Coordinator Office Hours: Monday 10:00-11:00 (Dr. Shalish) and Tuesday 10:00-11:00 (Dr. Muster)

Teaching Staff:
Course/Module description:
This course provides a broad knowledge in general growth, as well as specific fundamentals of craniofacial growth and development.

Course/Module aims:
- Provide the students with up-to-date knowledge relevant to the fields of growth and development with a focus on the craniofacial complex.
- Provide the students with tools to assess normal and abnormal growth.

Learning outcomes - On successful completion of this module, students should be able to:
On successful completion of this course, students should be able to:
- Discuss genetic and molecular aspects of growth as well as embryology concepts.
- Describe growth hypotheses.
- Evaluate skeletal maturation and general growth.
- Describe growth and function of the craniofacial complex, including soft tissues.
- Discuss endocrinology of growth.
- Describe syndromes and clefts.
- Integrate the knowledge of growth and development of the craniofacial system into orthodontic diagnosis and treatment planning.

Attendance requirements(%):
90

Teaching arrangement and method of instruction: Frontal lectures and seminars.
Reading assignments for each seminar session is to provide background information for class discussions related to the scheduled topics.

Course/Module Content:
1 Introduction to growth and development Dr. Haisraeli-Shalish
2 Growth of the cranium and the cranial base Dr. Muster
3 Maxillary growth Dr. Katz
4 Genetic and molecular aspects of craniofacial development Dr. Leibovich
5 Mandibular growth Prof. Ben-Bassat Dr. Grossman
6 Growth hypotheses Dr. I. Barkana
7 Facial growth dynamics Dr. Haisraeli-Shalish
8 Skeletal maturation Dr. I. Gillis
9 General growth Dr. Faerman
10 Soft tissues and function Dr. Friedman
11 Endocrinology and growth Dr. D. Gillis
12 Genetics and Orthodontics Dr. Harari and Dr. Ben-Neriya
13 Syndromes Dr. Harari & Dr. Ben-Neriya
14 Clefts Development and Etiology Prof. Ben-Bassat
15 Embryology of the craniofacial system Dr. Inbal
16 Exam

Required Reading:
I. Introduction to growth and development

II. Growth of the cranium and the cranial base

III. Maxillary growth
3. Melsen B: Palatal growth studied on human autopsy material: A histological micro-

IV. Genetic and molecular aspects of craniofacial development

V. Mandibular growth

VI. Growth hypotheses

VII. Facial growth dynamics

VIII. Skeletal maturation

IX. General growth

X. Function and Malocclusion
Growth of soft tissues
1. Bishara SE, Jacobsen JR, Hession TJ, Treder JE: Soft tissue profile changes from 5
2. Subtelny J.D. A longitudinal study of soft tissue facial structures and their profile
characteristic, defined in relation to underlying skeletal structures. AJO 1959; 45:
481-507.
3. Mamandras AH: Linear changes of maxillary and mandibular lips. AJODO
AJO 75: 405-415, 1979.*
6. Vig PC and Cohen AM: The size of the tongue and the intermaxillary space. AO
7. Nanda RS, Meng H, Kapila S, Goorhuis J: Growth changes in soft tissue facial

XI. Endocrinology and growth
3. Thilander B: Basic mechanisms in craniofacial growth. Acta Odontol Scand
maturation in short children born small for gestational age: effect of growth
on craniofacial growth in boys with delayed puberty. Eur J Orthodontics
craniofacial growth and dental maturation in Turner’s syndrome. Angle

XII. Genetics and Orthodontics
1. Rice DP. Craniofacial anomalies: from development to molecular pathogenesis. 
2. Lidral AC, Moreno LM. Progress toward discerning the genetics of cleft lip. Curr
3. Shprintzen RJ, Higgins AM, Antshel K, Fremont W, Roizen N, Kates W. Velo-cardio-

XIII. Syndromes
Oxford University Press 2001; pp. 33-37, 54-58, 249-252, 641-646, 649-651,
654-659, 700-705, 709.

XIV. Clefts – Development and Etiology

XV. Embryology of the craniofacial system

*Included in the mandatory reading list of the Israeli Scientific Council
**Additional Reading Material:**  
None

**Course/Module evaluation:**  
End of year written/oral examination 100 %  
Presentation 0 %  
Participation in Tutorials 0 %  
Project work 0 %  
Assignments 0 %  
Reports 0 %  
Research project 0 %  
Quizzes 0 %  
Other 0 %

**Additional information:**  
None